Hazard Analysis Form

This form can be used by Fermilab Employees, Fermilab Supervisors, Fermilab Task Managers, Construction Coordinators, Service Coordinators and Fermilab Subcontractors. This is a dynamic document which may require modification as the project moves from start to finish and should be readily available at the site where the work is being performed.

Note: Not all sections of the first page are applicable to every job or task, complete what is necessary for your specific job or task.

Job Title Ordering panels for delivery

Job Location DAB

Contract/Work Order # _____

TO BE COMPLETED FOR WORK INVOLVING SUBCONTRACTORS

Subcontractor (if applicable)	**Fermilab**
Company _____	Project Eng/C.M. _____
Project Manager _____	Phone _____
Phone _____ Page _____	TM/CC/SC _____
ESH Rep. _____	Phone _____ Page _____
Phone _____ Page _____	ES&H Rep. _____
	Phone _____ Page _____

AT LEAST TWO SIGNATURES ARE REQUIRED

☐ Prepared Martin Auger Date 08-25-2016

Print Name Martin Auger

☐ Accepted Angela Aparicio Date 8/25/16

Print Name Angela Aparicio

☐ Accepted as noted Stephen R. Holzbauer Date 08/31/16

Print Name Stephen R. Holzbauer

Description of Work: Reordering of CRT panels from the way they were delivered to FNAL to the sequence in which they will be installed at LArTF. The proper panels will be picked up with a vacuum lifting fixture from their original support frame and moved to their delivery frame in the proper order.

Personal Protective Equipment: (Check protective equipment required for the job.)

- ■ Safety glasses (marked Z87+; Z87-2+ for prescription)
- □ Hearing Protection
- □ 3.0 Brazing goggles
- □ Face shield
- □ Leather gloves
- □ Chemical resistant gloves (specify type):
- ■ Other required PPE (specify): Safety shoes
- □ Chemical splash goggles
- ■ Hard Hats
- □ Impact goggles
- □ Rubber apron
- □ Hot/Cold thermal protective gloves
- □ Respirators
- □ Fall protection equipment (specify):

Environmental Aspects (check one):

- □ Yes, I have thought about the environmental aspects (see Guidelines for Completing the HA on page 4) of this job and will document such aspects and mitigation steps within this document.
- ■ Yes, I have thought about the environmental aspects of this job and no such credible aspects exist and therefore do not need to be written in this document.

Equipment required for the job: (List the tools needed to perform the job.)

Vacuum lifting fixture, crane (in house), taglines (attached to fixture handle)

Work Plan History Information: (List any lessons learned incidents from this job, tips from previous jobs)

Improvement/Feedback: At the conclusion of the job, the Task Manager, Supervisor and/or Project Leader shall work with those involved to consider lessons learned and receive feedback in order to improve future work plans.

Check One:

- □ **Yes** we have considered lessons learned and accepted feedback on this job and will communicate such information so that future work plans may be improved.
- ■ **Yes** we have considered lessons learned feedback and determined that future work plans do not need to be improved.

Utilizing the format below, identify hazards and environmental aspects, and their corresponding safety precautions/procedures to mitigate hazards. Use as many sheets as necessary.

HAZARD ANALYSIS

Step	Description	Hazards/ Environmental Aspects	Precautions / Safety Procedures
1	Connect panel to vacuum fixture	Dropping/damaging panel. Crane work.	Vacuum fixture must be inspected daily before use. Inspectors must be qualified to inspect. Trained operator will follow procedure for vacuum fixture use. Crane operator will be an authorized operator.
2	Move panel from original frame to delivery frame	Damage to people below. Equipment. Pinch Hazard	Keep personnel clear. Fixture operators must be qualified to do so. Keep hands and feet clear.
3	When using taglines	Tangle hazard	Keep taglines clear of pivot points.
4	Break fixture vacuum	Pinch hazard.	Keep area secure. Move fixture slowly. Keep hands and feet clear.
5	Move fixture to next panel	Pinch hazard.	Keep hands and feet clear. Use good communication throughout exercise.
6	**Only qualified Anver fixture operators can utilize the lifting fixture**		Please see attached list for qualified operators.
7			
8			
9			
10			

GUIDELINES FOR COMPLETING THE HAZARD ANALYSIS

Phase of Work	Environmental/Safety Hazard	Precautions/Procedures
Examining a specific job by breaking it down into a series of steps or tasks, will enable you to discover potential hazards employees may encounter. Each job or operation will consist of a set of steps or tasks. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. To determine where a step begins or ends, look for a change of activity, change in direction or movement. Picking up the box from the conveyor and placing it on a hand truck is one step. The next step might be to push the loaded hand truck to the storage area (a change in activity. Moving the boxes from the truck and placing them on the shelf is another step. The final step might be returning the hand truck to the receiving area. Be sure to list *all* steps needed to perform the job. Some steps may not be performed each time; an example could be checking the casters on the hand truck. However, if that step is generally part of the job it should be listed. Close observation and knowledge of the job is important. Examine each step carefully to find and identify hazards- the actions, conditions, and possibilities that could lead to an accident. Compiling an accurate and complete list of potential hazards will allow you to develop the recommended safe job procedures needed to prevent accidents.	A hazard is a potential danger to a person or equipment. The purpose of the Job Safety Analysis is to identify ALL hazards- both those produced by the environment and those connected with the job procedure. To identify hazards, ask yourself these questions about each step: Is there a danger of the employee striking against, being struck by, or otherwise making injurious contact with an object? Can the employee be caught in, by, or between objects? Is there potential for slipping, tripping, or falling? Could the employee suffer strains from pushing, pulling, lifting, bending, or twisting? Is the environment hazardous to safety and/or health (toxic gas, vapor, mist, fumes, dust, heat, or radiation)? Are there electrocution hazards? Will action require soil/erosion control? Will chemicals or petroleum products be used in an area where they could be released into the environment? Will action have the potential to affect storm water (drains, ponds, or streams in the vicinity)? Will action have the potential to affect the sanitary water system? Will action involve refrigerants? Will any regulated or recyclable waste be generated?	Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury, or occupational illness. Begin by trying to: 1) engineer the hazard out; 2) provide guards, safety devices, etc.; 3) provide personal protective equipment; 4) provide job instruction training; 5) maintain good housekeeping; 6) insure good ergonomics (positioning the person in relation to the machine or other elements in such a way as to improve safety). List the recommended safe operating procedures. Begin with an action word. Say exactly what needs to be done to correct the hazard, such as, "lift using your leg muscles." Avoid general statements such as, "be careful", "use caution", and "be alert". List the required or recommended personal protective equipment necessary to perform each step of the job. Give a recommended action or procedure for each hazard. Serious hazards should be corrected immediately. The JSA should then be changed to reflect the new conditions. Finally, review your input on all three columns for accuracy and completeness. Determine if the recommended actions or procedures have been put in place. Re-evaluate the job safety analysis as necessary.

I have reviewed this hazard analysis and I understand the hazards and required precautionary actions. I will follow the requirements of this hazard analysis or notify my supervisor or Fermilab contact if I am unable to do so.

Name and ID (please print)	Signature	Date
OTTO ALVAREZ 11284		8/31/16
PETE SIMON 2972		8/31/16
John Cornele 6208		8/31/16
TOM OLSZANOWSKI 5036		8/31/16
MARK SHOUN 4959		8/31/16
Joseph Zennamo 142735		8/31/16
TIM GRIFFIN 5108		8/31/16
Martin Auger 31479V		31-8-16

Anver Vacuum Lifting Fixture Qualified Operator List

I acknowledge that I have received training to operate the Anver vacuum lifting fixture. While operating this device I will follow the procedures that are laid out in the Procedures and JHAs associated with the jobs at hand.

Name (Must be FNAL Employee)	ID#	Date	Trainer (Must be FNAL Employee)
John Cornele	6208	8.31.16	[signature]
[signature]	2972	8/31/16	049401
Tim Griffin	5108	8/31/16	
Otto Alvarez	11284	8/31/16	
Tom Olszanski	5036	8/31/16	
Mark Shoun	4959	8/31/16	
Bob Kubinski	5025	8/31/16	[signature] 049401